

SEQUENCE LISTING

<110> Birkett, Ashley J.

<120> MALARIA IMMUNOGEN AND VACCINE

<130> 4564/83502 ICC-103.1

<140> Not Yet Assigned

<141> 2001-08-15

<150> 60/225,843

<151> 2000-08-16

<160> 186

<170> PatentIn Ver. 2.1

<210> 1

<211> 16

<212> PRT

<213> Plasmodium falciparum

<400> 1

Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

<210> 2

<211> 24

<212> PRT

<213> Plasmodium falciparum

<400> 2

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro

20

<210> 3

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 3

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro

20

<210> 4

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 4
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp Pro
1 5 10 15

Asn Ala Asn Pro
20

<210> 5
<211> 28
<212> PRT
<213> Plasmodium falciparum

<400> 5
Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro
20 25

<210> 6
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 6
Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val
20

<210> 7
<211> 22
<212> PRT
<213> Plasmodium falciparum

<400> 7
Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val Asp Pro
20

<210> 8
<211> 24
<212> PRT
<213> Plasmodium falciparum

<400> 8
Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val Asp Pro Asn Ala
20

<210> 9
<211> 18
<212> PRT
<213> Plasmodium falciparum

<400> 9
Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val

<210> 10
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 10
Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val Asp Pro
20

<210> 11
<211> 22
<212> PRT
<213> Plasmodium falciparum

<400> 11
Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val Asp Pro Asn Ala
20

<210> 12
<211> 16
<212> PRT
<213> Plasmodium falciparum

<400> 12
Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
1 5 10 15

<210> 13
<211> 18
<212> PRT
<213> Plasmodium falciparum

<400> 13
Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
1 5 10 15

Asp Pro

<210> 14
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 14
Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
1 5 10 15

Asp Pro Asn Ala
20

<210> 15
<211> 18
<212> PRT
<213> Plasmodium vivax

<400> 15
Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro
1 5 10 15

Ala Gly

<210> 16
<211> 36
<212> PRT
<213> Plasmodium vivax

<400> 16
Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
1 5 10 15

Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp
20 25 30

Asp Gln Pro Gly
35

<210> 17
<211> 18
<212> PRT
<213> Plasmodium vivax

<400> 17
Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
1 5 10 15

Pro Gly

<210> 18
<211> 18
<212> PRT
<213> Plasmodium vivax

<400> 18
Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln
1 5 10 15
Pro Gly

<210> 19
<211> 18
<212> PRT
<213> Plasmodium vivax

<400> 19
Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Asp Asn Gln
1 5 10 15
Pro Gly

<210> 20
<211> 18
<212> PRT
<213> Plasmodium vivax

<400> 20
Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln
1 5 10 15

Pro Gly

<210> 21
<211> 22
<212> PRT
<213> Plasmodium vivax

<400> 21
Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala Asn
1 5 10 15
Gln Glu Gly Gly Ala Ala
20

<210> 22
<211> 16
<212> PRT
<213> Plasmodium berghei

<400> 22
Asp Pro Pro Pro Pro Asn Pro Asp Pro Pro Pro Pro Asn Pro Asn
1 5 10 15

<210> 23
<211> 24
<212> PRT
<213> Plasmodium yoelii

<400> 23
Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly
1 5 10 15
Ala Pro Gln Gly Pro Gly Ala Pro
20

<210> 24
<211> 22
<212> PRT
<213> Plasmodium falciparum

<400> 24
Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp
1 5 10 15
Ser Pro Cys Ser Val Thr
20

<210> 25
<211> 19
<212> PRT
<213> Plasmodium vivax

<400> 25
Tyr Leu Asp Lys Val Arg Ala Thr Val Gly Thr Glu Trp Thr Pro Cys
1 5 10 15
Ser Val Thr

<210> 26
<211> 20
<212> PRT
<213> Plasmodium yoelii

<400> 26
Glu Phe Val Lys Gln Ile Ser Ser Gln Leu Thr Glu Glu Trp Ser Gln
1 5 10 15
Cys Ser Val Thr
20

<210> 27
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: plasmid pkk223

<400> 27

ggtgcatgca aggagatg

18

<210> 28		
<211> 55		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> Description of Artificial Sequence:pKK223		
<400> 28		
gcgaagcttc ggatccatg gtttttcct ccttatgtga aattgttatac cgctc	55	
<210> 29		
<211> 24		
<212> DNA		
<213> Hepatitis B virus		
<400> 29		
ttgggccatg gacatcgacc ctta	24	
<210> 30		
<211> 29		
<212> DNA		
<213> Hepatitis B virus		
<400> 30		
gcggaattcc ttccaaatta acacccacc	29	
<210> 31		
<211> 38		
<212> DNA		
<213> Hepatitis B virus		
<400> 31		
cgcgaattca aaaagagctc gatccagcgt ctagagac	38	
<210> 32		
<211> 31		
<212> DNA		
<213> Hepatitis B virus		
<400> 32		
cgcaagctta aacaacagta gtctccggaa g	31	
<210> 33		
<211> 42		
<212> DNA		
<213> Hepatitis B virus		
<400> 33		
cgcaagctta gagctttga attccaaacaa cagtagtctc cg	42	
<210> 34		
<211> 39		
<212> DNA		
<213> Hepatitis B virus		

<400> 34			
cgcgaaattca aaaagagctc ccagcgtcta gagacctag	39		
<210> 35			
<211> 27			
<212> DNA			
<213> Hepatitis B virus			
<400> 35			
cgcgagctcc cagcgtctag agacctag	28		
<210> 36			
<211> 17			
<212> DNA			
<213> Artificial Sequence			
<220>			
<223> Description of Artificial Sequence:pKK223-2			
<400> 36			
gtatcaggct gaaaatc	17		
<210> 37			
<211> 19			
<212> PRT			
<213> Plasmodium falciparum			
<400> 37			
Ile Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn			
1	5	10	15
Pro Glu Leu			
<210> 38			
<211> 57			
<212> DNA			
<213> Plasmodium falciparum			
<400> 38			
aattaacgct aatccgaacg ctaatccgaa cgctaattccg aacgctaatc cggagct	57		
<210> 39			
<211> 49			
<212> DNA			
<213> Plasmodium falciparum			
<400> 39			
ccggattagc gttcgattt gcgttcggat tagcgttcgg attagcgtt	49		
<210> 40			
<211> 31			
<212> PRT			
<213> Plasmodium falciparum			

<400> 40
Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Glu Leu
20 25 30

<210> 41
<211> 93
<212> DNA
<213> Plasmodium falciparum

<400> 41
aattaacgct aatccgaacg ttgaccggaa cgctaatccg aacgctaatc cgaacgctaa 60
tccgaacgtt gacccgaacg ctaatccgga gct 93

<210> 42
<211> 91
<212> DNA
<213> Plasmodium falciparum

<400> 42
ggagctccgg attagcggtc gggtaaacgt tcggattagc gttcggatta gcgttcggat 60
tagcggtcgg gtcaacgttc ggattagcgt t 91

<210> 43
<211> 23
<212> PRT
<213> Plasmodium berghei

<400> 43
Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Ala Asn Pro Glu Leu
20

<210> 44
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 44
aattaacgct aatccgaacg tggatccgaa tgccaaacctt aacgccaacc caaatgcgaa 60
cccagagct 69

<210> 45
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 45
ctgggttcgc atttgggttg gcgttaggtt tggcattcgg atccacgttc ggattcgcgt 60
t 61

<210> 46
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 46
Ile Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp
1 5 10 15

Pro Asn Ala Asn Pro Glu Leu
20

<210> 47
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 47
aattaacgcg aatccgaatg ccaaccctaa cgccaaaccc aacgtggatc cgaatgcgaa 60
cccagagct 69

<210> 48
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 48
ctgggttcgc attcggatcc acgtttgggt tggcgtagg gttggcattc ggattcgcgt 60
t 61

<210> 49
<211> 31
<212> PRT
<213> Plasmodium falciparum

<400> 49
Ile Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Glu Leu
20 25 30

<210> 50
<211> 93
<212> DNA
<213> Plasmodium falciparum

<400> 50
aattaacgcg aatccgaacg tggatccaaa tgccaaacct aacgctaatc caaacgccaa 60
cccgaatgtt gaccccaatg ccaatccgga gct 93

<210> 51
<211> 85
<212> DNA
<213> Plasmodium falciparum

<400> 51
ccggattggc attggggtca acattcgggt tggcgttgg attagcgtta gggttggcat 60
ttggatccac gttcgattc gcgtt 85

<210> 52
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 52
Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15
Ala Asn Pro Asn Val Glu Leu
20

<210> 53
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 53
aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaacccgaa 60
tggtgagct 69

<210> 54
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 54
caacattcgg gttggcggtt ggatttagcgt tagggttggc atttggatcc acgttcggat 60
t 61

<210> 55
<211> 25
<212> PRT
<213> Plasmodium falciparum

<400> 55
Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15
Ala Asn Pro Asn Val Asp Pro Glu Leu
20 25

<210> 56
<211> 75
<212> DNA
<213> Plasmodium falciparum

<400> 56
aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaacccgaa 60
tggtgaccct gagct 75

<210> 57
<211> 67
<212> DNA
<213> Plasmodium falciparum

<400> 57
cagggtcaac attcgggttg gcgttggat tagcgtagg gttggcattt ggatccacgt 60
tcggatt 67

<210> 58
<211> 27
<212> PRT
<213> Plasmodium falciparum

<400> 58
Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Ala Asn Pro Asn Val Asp Pro Asn Ala Glu Leu
20 25

<210> 59
<211> 81
<212> DNA
<213> Plasmodium falciparum

<400> 59
aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaacccgaa 60
tggtgaccct aatgctgagc t 81

<210> 60
<211> 73
<212> DNA
<213> Plasmodium falciparum

<400> 60
cagcatttagg gtcaacattc gggttggcgt ttggattagc gttagggttg gcatttggat 60
ccacgttccg att 73

<210> 61
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 61
Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Val Glu Leu
20

<210> 62
<211> 63
<212> DNA
<213> Plasmodium falciparum

<400> 62
aattaacgtg gatccaaatg ccaaccctaa cgctaattca aacgccaacc cgaatgttga 60
gct 63

<210> 63
<211> 55
<212> DNA
<213> Plasmodium falciparum

<400> 63
caacattcgg gttggcggtt ggatttagcgt tagggttggc atttggatcc acgtt 55

<210> 64
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 64
Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Val Asp Pro Glu Leu
20

<210> 65
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 65
aattaacgtg gatccaaatg ccaaccctaa cgctaattca aacgccaacc cgaatgttga 60
ccctgagct 69

<210> 66
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 66
cagggtcaac attcgggttg gcgtttggat tagcgttagg gttggcattt ggatccacgt 60
t 61

<210> 67
<211> 25
<212> PRT
<213> Plasmodium falciparum

<400> 67
Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
1 5 10 15

Pro Asn Val Asp Pro Asn Ala Glu Leu
20 25

<210> 68
<211> 75
<212> DNA
<213> Plasmodium falciparum

<400> 68
aattaacgtg gatccaaatg ccaaccctaa cgctaattca aacgccaacc cgaatgttga 60
ccctaatgct gagct 75

<210> 69
<211> 67
<212> DNA
<213> Plasmodium falciparum

<400> 69
cagcattagg gtcaacatTC gggttggcgt ttggattagc gttagggttg gcatttggat 60
ccacgtt 67

<210> 70
<211> 19
<212> PRT
<213> Plasmodium falciparum

<400> 70
Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Val Glu Leu

<210> 71
<211> 57
<212> DNA
<213> Plasmodium falciparum

<400> 71
aattgatcca aatgccaacc ctaacgctaa tccaaacgCC aacccgaatg ttgagct 57

<210> 72
<211> 49
<212> DNA
<213> Plasmodium falciparum

<400> 72
caacattcgg gttggcgttt ggattagcgt tagggttggc atttggatc 49

<210> 73
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 73
Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Val Asp Pro Glu Leu
20

<210> 74
<211> 63
<212> DNA
<213> Plasmodium falciparum

<400> 74
aattgatcca aatgccaacc ctaacgctaa tccaaacgcc aacccgaatg ttgaccctga 60
gct 63

<210> 75
<211> 55
<212> DNA
<213> Plasmodium falciparum

<400> 75
cagggtcaac attcggttg gcgttggat tagcgttagg gttggcattt ggatc 55

<210> 76
<211> 23
<212> PRT
<213> Plasmodium falciparum

<400> 76
Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Val Asp Pro Asn Ala Glu Leu
20

<210> 77
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 77
aattgatcca aatgccaacc ctaacgctaa tccaaacgcc aacccgaatg ttgaccctaa 60
tgccgagct 69

<210> 78
<211> 61
<212> DNA
<213> Plasmodium falciparum

<400> 78
cgccattagg gtcaacattc gggttggcgt ttggattagc gttagggttg gcatttggat 60
c 61

<210> 79
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 79
Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser
1 5 10 15
Pro Cys Ser Val Thr
20

<210> 80
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 80
aattgaatat ctgaacaaaa tccagaactc tctgtccacc gaatggtctc cgtgctccgt 60
tacctagta 69

<210> 81
<211> 69
<212> DNA
<213> Plasmodium falciparum

<400> 81
agcttaactag gtaacggagc acggagacca ttccgtggac agagagttct ggattttgtt 60
cagatattc 69

<210> 82
<211> 24
<212> PRT
<213> Plasmodium vivax

<400> 82
Ile Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala
1 5 10 15
Ala Gly Gln Pro Ala Gly Glu Leu
20

<210> 83
<211> 72
<212> DNA
<213> Plasmodium vivax

<400> 83
aattccggct ggtgaccgtg cagatggcca gccagcgggt gaccgcgtg caggccagcc 60
ggctggcgag ct 72

<210> 84
<211> 64
<212> DNA
<213> Plasmodium vivax

<400> 84
cgccagccgg ctggcctgca gcgcggtcac ccgcgtggctg gccatctgca cggtcaccag 60
ccgg 64

<210> 85
<211> 21
<212> PRT
<213> Plasmodium vivax

<400> 85
Ile Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln
1 5 10 15
Pro Ala Gly Glu Leu
20

<210> 86
<211> 63
<212> DNA
<213> Plasmodium vivax

<400> 86
aattgacaga gcagccggac aaccagcagg cgatcgagca gacggacagc ccgcagggga 60
gct 63

<210> 87
<211> 55
<212> DNA
<213> Plasmodium vivax

<400> 87
ccccctgcggg ctgtccgtct gctcgatgc ctgctggttg tccggctgct ctgtc 55

<210> 88
<211> 21
<212> PRT
<213> Plasmodium falciparum

<400> 88
Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp
1 5 10 15
Gln Pro Gly Glu Leu
20

<210> 89
<211> 63
<212> DNA
<213> Plasmodium vivax

<400> 89
aattgcgaac ggccgcggta atcagccggg ggcaaacggc gcgggtgatc aaccagggga 60
gct 63

<210> 90
<211> 55
<212> DNA
<213> Plasmodium vivax

<400> 90
ccccctggttg atcacccgctg ccgtttgccc ccggctgatt accggcgccg ttcgc 55

<210> 91
<211> 21
<212> PRT
<213> Plasmodium vivax

<400> 91
Ile Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp
1 5 10 15

Gln Pro Gly Glu Leu
20

<210> 92
<211> 63
<212> DNA
<213> Plasmodium vivax

<400> 92
aattgcgaac ggccggata atcagccggg tgcaaacggg gcggatgacc aaccaggcga 60
gct 63

<210> 93
<211> 55
<212> DNA
<213> Plasmodium vivax

<400> 93
cgccctggttg gtcatccgcc ccgtttgcac ccggctgatt atcggcgccg ttcgc 55

<210> 94
<211> 39
<212> PRT
<213> Plasmodium vivax

<400> 94
Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp
1 5 10 15

Gln Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala
20 25 30

Asp Asp Gln Pro Gly Glu Leu
35

<210> 95
<211> 117
<212> DNA
<213> Plasmodium vivax

<400> 95
aattgcgaac ggccggata atcagccggg agcaaacggc gcggggatc aaccaggcgc 60
caatgggtca gacaaccagc ctggggcgaa tggagccat gaccaacccg gcgagct 117

<210> 96

<211> 109

<212> DNA

<213> Plasmodium vivax

<400> 96

cgccgggttg gtcatcggtt ccattcgccc caggctggtt gtctgcacca ttggcgccctg 60
gttgcgtttt cgccgcgttt gctcccggtt gattaccggc gccgttcgc 109

<210> 97

<211> 25

<212> PRT

<213> Plasmodium vivax

<400> 97

Ile Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala
1 5 10 15

Asn Gln Glu Gly Gly Ala Ala Glu Leu

20 25

<210> 98

<211> 75

<212> DNA

<213> Plasmodium vivax

<400> 98

aattgcgcgg ggcgcacc acc aggaagggtgg ggctgcagcg ccaggagcca atcaagaagg 60
cggcgcgcg gagct 75

<210> 99

<211> 67

<212> DNA

<213> Plasmodium vivax

<400> 99

ccgcgtgcacc gccttcttga ttggctcctg gcgcgtgcagc cccaccttcc tggttggcgc 60
cggcgcgc 67

<210> 100

<211> 21

<212> PRT

<213> Plasmodium vivax

<400> 100

Ile Glu Tyr Leu Asp Lys Val Arg Ala Thr Val Gly Thr Glu Trp Thr
1 5 10 15

Pro Cys Ser Val Thr

20

<210> 101

<211> 69

<212> DNA

<213> Plasmodium vinckeii

<400> 101
aattgaatat ctggataaaag tgcgtgcgac cggtggcacg gaatggactc cgtgcagcgt 60
gacctaata 69

<210> 102
<211> 69
<212> DNA
<213> Plasmodium vivax

<400> 102
agcttattag gtcacgctcg acggagtcca ttccgtgcca acggtcgcac gcactttatc 60
cagatattc 69

<210> 103
<211> 10
<212> PRT
<213> Plasmodium falciparum

<400> 103
Thr Val Ser Ala Pro Ser Trp Glu Thr Ser
1 5 10

<210> 104
<211> 42
<212> DNA
<213> Plasmodium falciparum

<400> 104
gccaaagctta ctaggttaacg gaggccggag accattcggt gg 42

<210> 105
<211> 6
<212> PRT
<213> Hepatitis B virus

<400> 105
Met Asp Ile Asp Pro Tyr
1 5

<210> 106
<211> 8
<212> PRT
<213> Hepatitis B virus

<400> 106
Cys Val Val Thr Thr Glu Pro Leu
1 5

<210> 107
<211> 37
<212> DNA
<213> Hepatitis B virus

<400> 107
cgcaagctta ctagcaaaca acagtagtct ccggaag

37

<210> 108
<211> 7
<212> PRT
<213> Hepatitis B virus

<400> 108
Pro Leu Thr Ser Leu Ile Pro
1 5

<210> 109
<211> 32
<212> DNA
<213> Hepatitis B virus

<400> 109
cgcaagctta cggaagtgtt gataggatag gg

32

<210> 110
<211> 8
<212> PRT
<213> Hepatitis B virus

<400> 110
Thr Ser Leu Ile Pro Ala Asn Pro
1 5

<210> 111
<211> 34
<212> DNA
<213> Hepatitis B virus

<400> 111
cgcaagctta tggatagg atagggcat ttgg

34

<210> 112
<211> 7
<212> PRT
<213> Hepatica americana

<400> 112
Leu Ile Pro Ala Asn Pro Pro
1 5

<210> 113
<211> 31
<212> DNA
<213> Hepatitis B virus

<400> 113
cgcaagctta taggataggg gcatttggtg g

31

<210> 114
<211> 6
<212> PRT
<213> Hepatitis B virus

<400> 114
Ile Pro Ala Asn Pro Pro
1 5

<210> 115
<211> 28
<212> DNA
<213> Hepatitis B virus

<400> 115
gcgaagctta gatagggca tttgggtgg

28

<210> 116
<211> 6
<212> PRT
<213> Hepatitis B virus

<400> 116
Pro Ala Asn Pro Pro Arg
1 5

<210> 117
<211> 28
<212> DNA
<213> Hepatitis B virus

<400> 117
cgcaagctta agggcattt ggtggtct

28

<210> 118
<211> 7
<212> PRT
<213> Hepatitis B virus

<400> 118
Cys Pro Ala Asn Pro Pro Arg
1 5

<210> 119
<211> 31
<212> DNA
<213> Hepatitis B virus

<400> 119
gcgaagctta gcaagggca tttgggtggtc t

31

<210> 120
<211> 7
<212> PRT
<213> Hepatitis B virus

<400> 120
Ala Asn Pro Pro Arg Tyr Ala
1 5

<210> 121
<211> 30
<212> DNA
<213> Hepatitis B virus

<400> 121
gcgaagctta ggcatttggt ggtctatagc

30

<210> 122
<211> 8
<212> PRT
<213> Hepatitis B virus

<400> 122
Cys Ala Asn Pro Pro Arg Tyr Ala
1 5

<210> 123
<211> 32
<212> DNA
<213> Hepatitis B virus

<400> 123
gcgaagctta gcaggcattt ggtggtctat aa

32

<210> 124
<211> 7
<212> PRT
<213> Hepatitis B virus

<400> 124
Asn Pro Pro Arg Tyr Ala Pro
1 5

<210> 125
<211> 31
<212> DNA
<213> Hepatitis B virus

<400> 125
cgcaagctta atttggtggt ctataagctg g

31

<210> 126
<211> 8
<212> PRT
<213> Plasmodium falciparum

<400> 126
Asn Ala Asn Pro Asn Val Asp Pro
1 5

<210> 127
<211> 6
<212> PRT
<213> Homo sapiens

<400> 127
Asn Tyr Lys Lys Pro Lys
1 5

<210> 128
<211> 7
<212> PRT
<213> Homo sapiens

<400> 128
Lys Arg Gly Pro Arg Thr His
1 5

<210> 129
<211> 21
<212> PRT
<213> Homo sapiens

<400> 129
Leu His Pro Asp Glu Thr Lys Asn Met Leu Glu Met Ile Phe Thr Pro
1 5 10 15

Arg Asn Ser Asp Arg
20

<210> 130
<211> 5
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 130
Arg Ile Lys Gln Ile
1 5

<210> 131
<211> 11
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 131
Arg Ile Lys Gln Ile Gly Met Pro Gly Gly Lys
1 5 10

<210> 132
<211> 10
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 132
Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu
1 5 10

<210> 133
<211> 14
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 133
Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu Trp
1 5 10

<210> 134
<211> 33
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 134
Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His
1 5 10 15

Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile
20 25 30

Leu

<210> 135
<211> 16
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 135
His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg
1 5 10 15

<210> 136
<211> 36
<212> PRT
<213> Human immunodeficiency virus

<400> 136
Tyr Thr His Ile Ile Tyr Ser Leu Ile Glu Gln Ser Gln Asn Gln Gln
1 5 10 15

Glu Lys Asn Glu Gln Glu Leu Leu Ala Leu Asp Lys Trp Ala Ser Leu
20 25 30

Trp Asn Trp Phe
35

<210> 137
<211> 26
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 137
Tyr Thr His Ile Ile Tyr Ser Leu Ile Glu Gln Ser Gln Asn Gln Gln
1 5 10 15
Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu
20 25

<210> 138

<211> 19
<212> PRT
<213> Homo sapiens

<400> 138

Gly Arg Glu Arg Arg Pro Arg Leu Ser Asp Arg Pro Gln Leu Pro Tyr
1 5 10 15

Leu Glu Ala

<210> 139

<211> 20
<212> PRT
<213> Homo sapiens

<400> 139

Arg Glu Gln Arg Arg Phe Ser Val Ser Thr Leu Arg Asn Leu Gly Leu
1 5 10 15

Gly Lys Lys Ser
20

<210> 140

<211> 18
<212> PRT
<213> Plasmodium yoelii

<400> 140

Pro Asn Lys Leu Pro Arg Ser Thr Ala Val Val His Gln Leu Lys Arg
1 5 10 15

Lys His

<210> 141

<211> 11
<212> PRT
<213> Plasmodium yoelii

<400> 141

Thr Ala Val Val His Gln Leu Lys Arg Lys His
1 5 10

<210> 142

<211> 22

<212> PRT

<213> Plasmodium vivax

<400> 142

Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Ala
1 5 10 15

Ala Gly Gln Pro Ala Gly

20

<210> 143

<211> 12

<212> PRT

<213> Avian leukosis virus

<400> 143

Asn Gln Ser Trp Thr Met Val Ser Pro Ile Asn Val
1 5 10

<210> 144

<211> 16

<212> PRT

<213> Avian leukosis virus

<400> 144

Met Ile Lys Asn Gly Thr Lys Arg Thr Ala Val Thr Phe Gly Ser Val
1 5 10 15

<210> 145

,

<211> 19

<212> PRT

<213> Foot-and-mouth disease virus

<400> 145

Pro Asn Leu Arg Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg
1 5 10 15

Thr Leu Pro

<210> 146

<211> 26

<212> PRT

<213> Foot-and-mouth disease virus

<400> 146

Arg Tyr Asn Arg Asn Ala Val Pro Asn Leu Arg Gly Asp Leu Gln Val
1 5 10 15

Leu Ala Gln Lys Val Ala Arg Thr Leu Pro

20

<210> 147
<211> 34
<212> PRT
<213> Hepatitis B virus

<400> 147
Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg
1 5 10 15

Arg Arg Ser Gln Ser Pro Arg Arg Arg Ser Gln Ser Arg Glu Ser
20 25 30

Gln Cys

<210> 148
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 148
Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro
1 5 10 15

Cys Ser Val Thr
20

<210> 149
<211> 20
<212> PRT
<213> Plasmodium falciparum

<400> 149
Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro
1 5 10 15

Ala Ser Val Thr
20

<210> 150
<211> 18
<212> PRT
<213> Plasmodium vivax

<400> 150
Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro
1 5 10 15

Ala Gly

<210> 151
<211> 36
<212> PRT
<213> Plasmodium vivax

<400> 151
Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
1 5 10 15

Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp
20 25 30

Asp Gln Pro Gly
35

<210> 152
<211> 9
<212> PRT
<213> Plasmodium vivax

<400> 152
Asp Arg Ala Ala Gly Gln Pro Ala Gly
1 5

<210> 153
<211> 9
<212> PRT
<213> Plasmodium vivax

<400> 153
Asp Arg Ala Asp Gly Gln Pro Ala Gly
1 5

<210> 154
<211> 9
<212> PRT
<213> Plasmodium vivax

<400> 154
Ala Asn Gly Ala Gly Asn Gln Pro Gly
1 5

<210> 155
<211> 9
<212> PRT
<213> Plasmodium vivax

<400> 155
Ala Asn Gly Ala Gly Asp Gln Pro Gly
1 5

<210> 156
<211> 9
<212> PRT
<213> Plasmodium vivax

<400> 156
Ala Asn Gly Ala Asp Asn Gln Pro Gly
1 5

<210> 157
<211> 9
<212> PRT
<213> Plasmodium vivax

<400> 157
Ala Asn Gly Ala Asp Asp Gln Pro Gly
1 5

<210> 158
<211> 11
<212> PRT
<213> Plasmodium vivax

<400> 158
Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala
1 5 10

<210> 159
<211> 21
<212> PRT
<213> Plasmodium vivax

<400> 159
Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Ala
1 5 10 15
Gly Gln Pro Ala Gly
20

<210> 160
<211> 18
<212> PRT
<213> Plasmodium vivax

<400> 160
Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
1 5 10 15
Pro Gly

<210> 161
<211> 19
<212> PRT
<213> Plasmodium vivax

<400> 161
Gln Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp
1 5 10 15
Gln Pro Gly

```

<210> 162
<211> 44
<212> DNA
<213> Plasmodium vivax

<400> 162
cgcgaattca agcgaacggc gccgataatc agccggcgaa tgca 44

<210> 163
<211> 22
<212> PRT
<213> Plasmodium vivax

<400> 163
Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala Asn
1 5 10 15

Gln Glu Gly Gly Ala Ala
20

<210> 164
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: modified
portion of Hepatitis B core

<400> 164
Cys Val Val Thr Thr Glu Pro
1 5

<210> 165
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: modified
portion of Hepatitis B core

<400> 165
gcaagcttac tattgaattc cgcaaacaac agtagtctcc gg 42

<210> 166
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: modified
portion of Hepatitis B core

<400> 166
Thr Thr Val Val Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu
1 5 10 15

```

Ser Thr Glu Trp Ser Pro Cys Ser Val Thr
20 25

<210> 167
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: modified
portion of Hepatitis B core

<400> 167
Thr Thr Val Val Cys Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser
1 5 10 15

Leu Ser Thr Glu Trp Ser Pro Ala Ser Val Thr
20 25

<210> 168
<211> 217
<212> PRT
<213> Spermophilus variegatus

<400> 168
Met Tyr Leu Phe His Leu Cys Leu Val Phe Ala Cys Val Pro Cys Pro
1 5 10 15

Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp
20 25 30

Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
35 40 45

Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
50 55 60

Ala Ala Leu Tyr Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
65 70 75 80

His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr
85 90 95

Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg
100 105 110

Ile Ile Val Asp His Val Asn Asn Thr Trp Gly Leu Lys Val Arg Gln
115 120 125

Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gly His Thr Val
130 135 140

Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro
145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr
165 170 175

Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg
180 185 190

Arg Thr Pro Ser Pro Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
195 200 205

Arg Ser Gln Ser Pro Ala Ser Asn Cys
210 215

<210> 169

<211> 651

<212> DNA

<213> Spermophilus variegatus

<400> 169

atgtatctt ttcacctgtg ccttgcgtt gcctgtgtc catgtcctac tggcaagcc 60
tccaaagctgt gccttggatg gctttggac atggacatag atccctataa agaatttgg 120
tcttcttatac agttgttgaa ttttcttcct ttggacttt ttcctgatct caatgcattg 180
gtggacactg ctgcgtctt ttatgaagaa gaattaacag gtagggagca ttgttctcct 240
catcataactg ctattagaca ggccttagtg tggatggaaag aattaactag attaattaca 300
tggatgagtg aaaataacaac agaagaagtt agaagaatta ttgttgcata tggcaataat 360
acttggggac taaaagtaag acagactta tgggttcatt tattatgtct tactttgg 420
caacacacag ttcaagaatt tttggtagt tttggagtagt ggattagaac tccagctcct 480
tatagaccac ctaatgcacc cattttatca actcttcgg aacatacagt cattaggaga 540
agaggagggtt caagagctgc taggtcccc cgaagacgca ctccctctcc tcgcaggaga 600
aggtctcaat caccgcgtcg cagacgctct caatctccag cttccaactg c 651

<210> 170

<211> 183

<212> PRT

<213> Hepatitis B virus

<400> 170

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
180

<210> 171

<211> 185

<212> PRT

<213> Hepatitis B virus

<400> 171

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Gln Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
145 150 155 160

Arg Thr Pro Ser Pro Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
165 170 175

Arg Ser Gln Ser Arg Glu Ser Gln Cys
180 185

<210> 172

<211> 185

<212> PRT

<213> Hepatitis B virus

<400> 172
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Val Gly Leu Lys
85 90 95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
145 150 155 160

Arg Thr Pro Ser Pro Arg Arg Pro Ser Gln Ser Pro Arg Arg Arg
165 170 175

Arg Ser Gln Ser Arg Glu Ser Gln Cys
180 185

<210> 173
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 173
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
85 90 95

Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg
100														110	
Glu	Thr	Val	Leu	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr
115														125	
Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro
130														140	
Glu	Thr	Thr	Val	Val	Arg	Arg	Arg	Gly	Arg	Ser	Pro	Arg	Arg	Arg	Thr
145														160	
Pro	Ser	Pro	Arg	Arg	Arg	Arg	Ser	Gln	Ser	Pro	Arg	Arg	Arg	Ser	
														175	
Gln	Ser	Arg	Glu	Ser	Gln	Cys									
														180	

<210> 174

<211> 183

<212> PRT

<213> Marmota monax

<400> 174

Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ser	Ser	Tyr	Gln	Leu	Leu
1														15	

Asn	Phe	Leu	Pro	Leu	Asp	Phe	Phe	Pro	Asp	Leu	Asn	Ala	Leu	Val	Asp
														30	
20															

Thr	Ala	Thr	Ala	Leu	Tyr	Glu	Glu	Leu	Thr	Gly	Arg	Glu	His	Cys	
35														45	

Ser	Pro	His	His	Thr	Ala	Ile	Arg	Gln	Ala	Leu	Val	Cys	Trp	Asp	Glu
50														60	

Leu	Thr	Lys	Leu	Ile	Ala	Trp	Met	Ser	Ser	Asn	Ile	Thr	Ser	Glu	Gln
65														80	

Val	Arg	Thr	Ile	Ile	Val	Asn	His	Val	Asn	Asp	Thr	Trp	Gly	Leu	Lys
85														95	

Val	Arg	Gln	Ser	Leu	Trp	Phe	His	Leu	Ser	Cys	Leu	Thr	Phe	Gly	Gln
100														110	

His	Thr	Val	Gln	Glu	Phe	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr
115														125	

Pro	Ala	Pro	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro
130														140	

Glu	His	Thr	Val	Ile	Arg	Arg	Arg	Gly	Gly	Ala	Arg	Ala	Ser	Arg	Ser
145														160	

Pro	Arg	Arg	Arg	Thr	Pro	Ser	Pro	Arg	Arg	Arg	Ser	Gln	Ser	Pro	
165														175	

Arg	Arg	Arg	Arg	Ser	Gln	Cys									
180															

<210> 175
<211> 549
<212> DNA
<213> Hepatitis B virus

<400> 175
atggacatcg acccttataa agaatttgg gctactgtgg agttactctc gttttgcct 60
tctgacttct ttcccttcgt acgagatctc ctagacaccg cctcagctct gtatcgagaa 120
gccttagagt ctccctgagca ttgctcacct caccatactg cactcaggca agcaattctt 180
tgctgggggg aactaatgac tctagctacc tgggtgggtg ttaatttgg aagatccagcg 240
tcttagagacc tagtagtca tagtgcac actaatatgg gcctaaagtt caggcaactc 300
ttgtgggttc acatttcttgc tctcacctt ggaagagaaaa cagttataga gtatttgggtg 360
tcttcggag tggattcg cactcctcca gcttataagac caccaaatgc ccctatccta 420
tcaacacttc cggagactac tgggtttaga cgacgaggca ggtcccttag aagaagaact 480
ccctcgccctc gcagacgaag gtcctcaatcg ccgcgtcgca gaagatctca atctcgaa 540
tctcaatgt 549

<210> 176
<211> 555
<212> DNA
<213> Hepatitis B virus

<400> 176
atggacattg acccttataa agaatttgg gctactgtgg agttactctc gttttgcct 60
tctgacttct ttcccttcgt acgagatctc ctagacaccg cctcagctct gtatcgagaa 120
gccttagagt ctccctgagca ttgctcacct caccatactg cactcaggca agccattctc 180
tgctgggggg aatttgcac tctagctacc tgggtgggtt ataatttgc aagatccagca 240
tccagagatc tagtagtca ttatgttaat actaacatgg gtttaagat caggcaacta 300
ttgtgggttc atatatcttgc cttcacctt ggaagagaga ctgtacttga atatttggtc 360
tcttcggag tggattcg cactcctcca gcttataagac caccaaatgc ccctatccta 420
tcaacacttc cggaaactac tgggtttaga cgacgggacc gaggcaggta ccctagaaga 480
agaactccctc cgcctcgca acgcagatct caatcgccgc gtcgcagaag atctcaatct 540
cgggaaatctc aatgt 555

<210> 177
<211> 555
<212> DNA
<213> Hepatitis B virus

<400> 177
atggacattg acccttataa agaatttgg gctactgtgg agttactctc gttttgcct 60
tctgacttct ttcccttcgt cagagatctc ctagacaccg cctcagctct gtatcgagaa 120
gccttagagt ctccctgagca ttgctcacct caccatactg cactcaggca agccattctc 180
tgctgggggg aatttgcac tctagctacc tgggtgggtt ataatttgg aagatccagca 240
tcttagggatc ttgtgttaaa ttatgttaat actaacgtgg gtttaagat caggcaacta 300
ttgtgggttc atatatcttgc cttcacctt ggaagagaga ctgtacttga atatttggtc 360
tcttcggag tggattcg cactcctcca gcttataagac caccaaatgc ccctatccta 420
tcaacacttc cggaaactac tgggtttaga cgacgggacc gaggcaggta ccctagaaga 480
agaactccctc cgcctcgca acgcagatct caatcgccgc gtcgcagaag atctcaatct 540
cgggaaatctc aatgt 555

<210> 178
<211> 549
<212> DNA
<213> Hepatitis B virus

<400> 178
atggacattg acccttataa agaatttgg a gctactgtgg agttactctc gttttgcct 60
tctgacttct ttccctccgt acgagatctt ctagataccg ccgcagctct gtatcggat 120
gccttagagt ctccctgagca ttgttccacctt caccatactg cactcaggca agcaattctt 180
tgctggggag acttaatgac tctagctacc tgggtggta ctaattttaga agatccagca 240
tctagggacc tagtagttag cttatgtcaac actaatgtgg gcctaaagtt cagacaattt 300
ttgtgggttc acatttcttgc tctcactttt ggaagagaaa cggttctaga gtatttggtg 360
tcttttggag tggattcg cactcccca gcttataagac caccaaatgc ccctatccta 420
tcaacgcttc cggagactac tggtgtttaga cgacgaggca ggtcccctag aagaagaact 480
ccctcgccctc gcagacgaag atctcaatcg ccgcgtcgca gaagatctca atctcgggaa 540
tctcaatgt 549

<210> 179
<211> 549
<212> DNA
<213> Marmota monax

<400> 179
atggacattg acccttataa agaatttgg a gctactgtgg agttactctc gttttgcct 60
tctgacttct ttccctccgt acgagatctt ctagataccg ccgcagctct gtatcggat 120
gccttagagt ctccctgagca ttgttccacctt caccatactg cactcaggca agcaattctt 180
tgctggggag acttaatgac tctagctacc tgggtggta ctaattttaga agatccagca 240
tctagggacc tagtagttag cttatgtcaac actaatgtgg gcctaaagtt cagacaattt 300
ttgtgggttc acatttcttgc tctcactttt ggaagagaaa cggttctaga gtatttggtg 360
tcttttggag tggattcg cactcccca gcttataagac caccaaatgc ccctatccta 420
tcaacgcttc cggagactac tggtgtttaga cgacgaggca ggtcccctag aagaagaact 480
ccctcgccctc gcagacgaag atctcaatcg ccgcgtcgca gaagatctca atctcgggaa 540
tctcaatgt 549

<210> 180
<211> 51
<212> DNA
<213> plasmid pKK223

<400> 180
ttcacacagg aaacagaatt cccggggatc cgtcgacctg cagccaaagct t 51

<210> 181
<211> 38
<212> DNA
<213> plasmid pKK223

<400> 181
ttcacataag gagaaaaaaa ccatgggatc cgaagctt 38

<210> 182
<211> 16
<212> PRT
<213> Hepatitis B virus

<400> 182
Gly Ile Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val Val Ser
1 5 10 15

<210> 183

<211> 17

<212> PRT

<213> Hepatitis B virus

<400> 183

Gly Ile Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val Val Ser
1 5 10 15

Cys

<210> 184

<211> 4

<212> PRT

<213> Plasmodium falciparum

<400> 184

Asn Ala Asn Pro

1

<210> 185

<211> 4

<212> PRT

<213> Plasmodium falciparum

<400> 185

Asn Val Asp Pro

1

<210> 186

<211> 31

<212> DNA

<213> Hepatitis B virus

<400> 186

gcggaattcc atcttccaaa ttaacacccca c

31